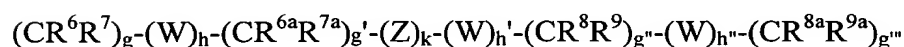


This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Previously Presented): A compound, comprising: a targeting moiety and a chelator, wherein the targeting moiety is bound to the chelator, is a peptide or peptidomimetic, and binds to a receptor that is upregulated during angiogenesis, the receptor is  $\alpha_v\beta_3$ , and the compound has a linking group between the targeting moiety and chelator, the linking group having the formula:



wherein,

W is independently selected at each occurrence from the group: O, S, NH, NHC(=O), C(=O)NH, C(=O), C(=O)O, OC(=O), NHC(=S)NH, NHC(=O)NH, SO<sub>2</sub>, (OCH<sub>2</sub>CH<sub>2</sub>)<sub>s</sub>, (CH<sub>2</sub>CH<sub>2</sub>O)<sub>s'</sub>, (OCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>)<sub>s''</sub>, (CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>O)<sub>t</sub>, and (aa)<sub>t'</sub>;

aa is independently at each occurrence an amino acid;

Z is selected from the group: aryl substituted with 0-3 R<sup>10</sup>, C<sub>3-10</sub> cycloalkyl substituted with 0-3 R<sup>10</sup>, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R<sup>10</sup>;

R<sup>6</sup>, R<sup>6a</sup>, R<sup>7</sup>, R<sup>7a</sup>, R<sup>8</sup>, R<sup>8a</sup>, R<sup>9</sup> and R<sup>9a</sup> are independently selected at each occurrence from the group: H, =O, COOH, SO<sub>3</sub>H, PO<sub>3</sub>H, C<sub>1</sub> C<sub>5</sub> alkyl substituted with 0-3 R<sup>10</sup>, aryl substituted with 0-3 R<sup>10</sup>, benzyl substituted with 0-3 R<sup>10</sup>, and C<sub>1</sub> C<sub>5</sub> alkoxy substituted with 0-3 R<sup>10</sup>, NHC(=O)R<sup>11</sup>, C(=O)NHR<sup>11</sup>, NHC(=O)NHR<sup>11</sup>, NHR<sup>11</sup>, R<sup>11</sup>, and a bond to the chelator;

$R^{10}$  is independently selected at each occurrence from the group: a bond to the chelator,  $\text{COOR}^{11}$ ,  $\text{OH}$ ,  $\text{NHR}^{11}$ ,  $\text{SO}_3\text{H}$ ,  $\text{PO}_3\text{H}$ , aryl substituted with 0-3  $R^{11}$ ,  $\text{C}_{1-5}$  alkyl substituted with 0-1  $R^{12}$ ,  $\text{C}_{1-5}$  alkoxy substituted with 0-1  $R^{12}$ , and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3  $R^{11}$ ;

$R^{11}$  is independently selected at each occurrence from the group: H, aryl substituted with 0-1  $R^{12}$ , a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1  $R^{12}$ ,  $\text{C}_{3-10}$  cycloalkyl substituted with 0-1  $R^{12}$ , polyalkylene glycol substituted with 0-1  $R^{12}$ , carbohydrate substituted with 0-1  $R^{12}$ , cyclodextrin substituted with 0-1  $R^{12}$ , amino acid substituted with 0-1  $R^{12}$ , polycarboxyalkyl substituted with 0-1  $R^{12}$ , polyazaalkyl substituted with 0-1  $R^{12}$ , peptide substituted with 0-1  $R^{12}$ , wherein the peptide is comprised of 2-10 amino acids, and a bond to the chelator;

$R^{12}$  is a bond to the chelator;

k is selected from 0, 1, and 2;

h is selected from 0, 1, and 2;

h' is selected from 0, 1, 2, 3, 4, and 5;

h'' is selected from 0, 1, 2, 3, 4, and 5;

g is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

g' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

g'' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

g''' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

s is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

s' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

s'' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

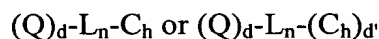
t is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10; and

t' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

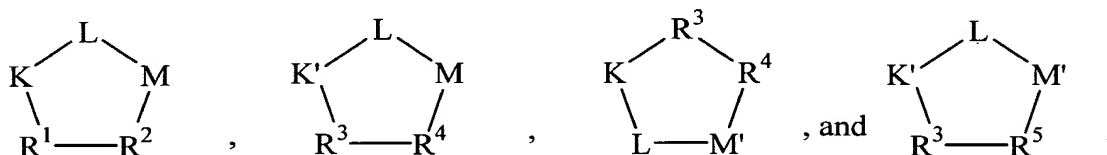
with the proviso that at least one of k, h, h', h'', g, g', g'', and g''' is other than 0.

2. (Previously Presented): A compound according to Claim 1, wherein the targeting moiety is a peptide or a mimetic thereof and the linking group is present between the targeting moiety and chelator.

3. (Previously Presented): A compound according to Claim 2, the compound is of the formula:



wherein, Q is a peptide independently selected from the group:



K is an L-amino acid independently selected at each occurrence from the group: arginine, citrulline, N-methylarginine, lysine, homolysine, 2-aminoethylcysteine,  $\delta$ -N-2-imidazolinylnornithine,  $\delta$ -N-benzylcarbamoylnornithine, and  $\beta$ -2-benzimidazolylacetyl-1,2-diaminopropionic acid;

K' is a-D amino acid independently selected at each occurrence from the group: arginine, citrulline, N-methylarginine, lysine, homolysine, 2-aminoethylcysteine,  $\delta$ -N-2-imidazolinylnornithine,  $\delta$ -N-benzylcarbamoylnornithine, and  $\beta$ -2-benzimidazolylacetyl-1, 2-diaminopropionic acid;

L is independently selected at each occurrence from the group: glycine, L-alanine, and D-alanine;

M is L-aspartic acid;

M' is D-aspartic acid;

R<sup>1</sup> is an amino acid substituted with 0-1 bonds to L<sub>n</sub>, independently selected at each occurrence from the group: glycine, L-valine, D-valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, 2-aminohexanoic acid, tyrosine, phenylalanine, thienylalanine, phenylglycine, cyclohexylalanine, homophenylalanine, 1-naphthylalanine, lysine, serine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, cysteine, penicillamine, and methionine;

R<sup>2</sup> is an amino acid, substituted with 0-1 bonds to L<sub>n</sub>, independently selected at each occurrence from the group: glycine, valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, 2-aminohexanoic acid, tyrosine, L-phenylalanine, D-phenylalanine, thienylalanine, phenylglycine, biphenylglycine, cyclohexylalanine, homophenylalanine, L-1-naphthylalanine, D-1-naphthylalanine, lysine, serine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, cysteine, penicillamine, methionine, and 2-aminothiazole-4-acetic acid;

R<sup>3</sup> is an amino acid, substituted with 0-1 bonds to L<sub>n</sub>, independently selected at each occurrence from the group: glycine, D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-2-aminohexanoic acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, D-cysteine, D-penicillamine, and D-methionine;

R<sup>4</sup> is an amino acid, substituted with 0-1 bonds to L<sub>n</sub>, independently selected at each occurrence from the group: glycine, D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-2-aminohexanoic acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-serine, D-ornithine, D-1,2-

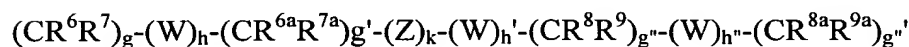
diaminobutyric acid, D-1,2-diaminopropionic acid, D-cysteine, D-penicillamine, D-methionine, and 2-aminothiazole-4-acetic acid;

$R^5$  is an amino acid, substituted with 0-1 bonds to  $L_n$ , independently selected at each occurrence from the group: glycine, L-valine, L-alanine, L-leucine, L-isoleucine, L-norleucine, L-2-aminobutyric acid, L-2-aminohexanoic acid, L-tyrosine, L-phenylalanine, L-thienylalanine, L-phenylglycine, L-cyclohexylalanine, L-homophenylalanine, L-1-naphthylalanine, L-lysine, L-serine, L-ornithine, L-1,2-diaminobutyric acid, L-1,2-diaminopropionic acid, L-cysteine, L-penicillamine, L-methionine, and 2-aminothiazole-4-acetic acid;

provided that one of  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  in each Q is substituted with a bond to  $L_n$ , further provided that when  $R^2$  is 2-aminothiazole-4-acetic acid, K is N-methylarginine, further provided that when  $R^4$  is 2-aminothiazole-4-acetic acid, K and K' are N-methylarginine, and still further provided that when  $R^5$  is 2-aminothiazole-4-acetic acid, K' is N-methylarginine;

d is selected from 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

$L_n$  is a linking group having the formula:



provided that  $g+h+g'+k+h'+g''+h''+g'''$  is other than 0;

W is independently selected at each occurrence from the group: O, S, NH, NHC(=O), C(=O)NH, C(=O), C(=O)O, OC(=O), NHC(=S)NH, NHC(=O)NH, SO<sub>2</sub>, (OCH<sub>2</sub>CH<sub>2</sub>)<sub>s</sub>, (CH<sub>2</sub>CH<sub>2</sub>O)<sub>s</sub>, (OCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>)<sub>s</sub>, (CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>O)<sub>t</sub>, and (aa)<sub>t</sub>;

aa is independently at each occurrence an amino acid;

Z is selected from the group: aryl substituted with 0-3  $R^{10}$ ,  $C_{3-10}$  cycloalkyl substituted with 0-3  $R^{10}$ , and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3  $R^{10}$ ;

$R^6$ ,  $R^{6a}$ ,  $R^7$ ,  $R^{7a}$ ,  $R^8$ ,  $R^{8a}$ ,  $R^9$  and  $R^{9a}$  are independently selected at each occurrence from the group: H, =O, COOH,  $SO_3H$ ,  $PO_3H$ ,  $C_1$   $C_5$  alkyl substituted with 0-3  $R^{10}$ , aryl substituted with 0-3  $R^{10}$ , benzyl substituted with 0-3  $R^{10}$ , and  $C_1$   $C_5$  alkoxy substituted with 0-3  $R^{10}$ ,  $NHC(=O)R^{11}$ ,  $C(=O)NHR^{11}$ ,  $NHC(=O)NHR^{11}$ ,  $NHR^{11}$ ,  $R^{11}$ , and a bond to  $C_h$ ;

$R^{10}$  is independently selected at each occurrence from the group: a bond to  $C_h$ ,  $COOR^{11}$ , OH,  $NHR^{11}$ ,  $SO_3H$ ,  $PO_3H$ , aryl substituted with 0-3  $R^{11}$ ,  $C_{1-5}$  alkyl substituted with 0-1  $R^{12}$ ,  $C_{1-5}$  alkoxy substituted with 0-1  $R^{12}$ , and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3  $R^{11}$ ;

$R^{11}$  is independently selected at each occurrence from the group: H, aryl substituted with 0-1  $R^{12}$ , a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1  $R^{12}$ ,  $C_{3-10}$  cycloalkyl substituted with 0-1  $R^{12}$ , polyalkylene glycol substituted with 0-1  $R^{12}$ , carbohydrate substituted with 0-1  $R^{12}$ , cyclodextrin substituted with 0-1  $R^{12}$ , amino acid substituted with 0-1  $R^{12}$ , polycarboxyalkyl substituted with 0-1  $R^{12}$ , polyazaalkyl substituted with 0-1  $R^{12}$ , peptide substituted with 0-1  $R^{12}$ , wherein the peptide is comprised of 2-10 amino acids, and a bond to  $C_h$ ;

$R^{12}$  is a bond to  $C_h$ ;

k is selected from 0, 1, and 2;

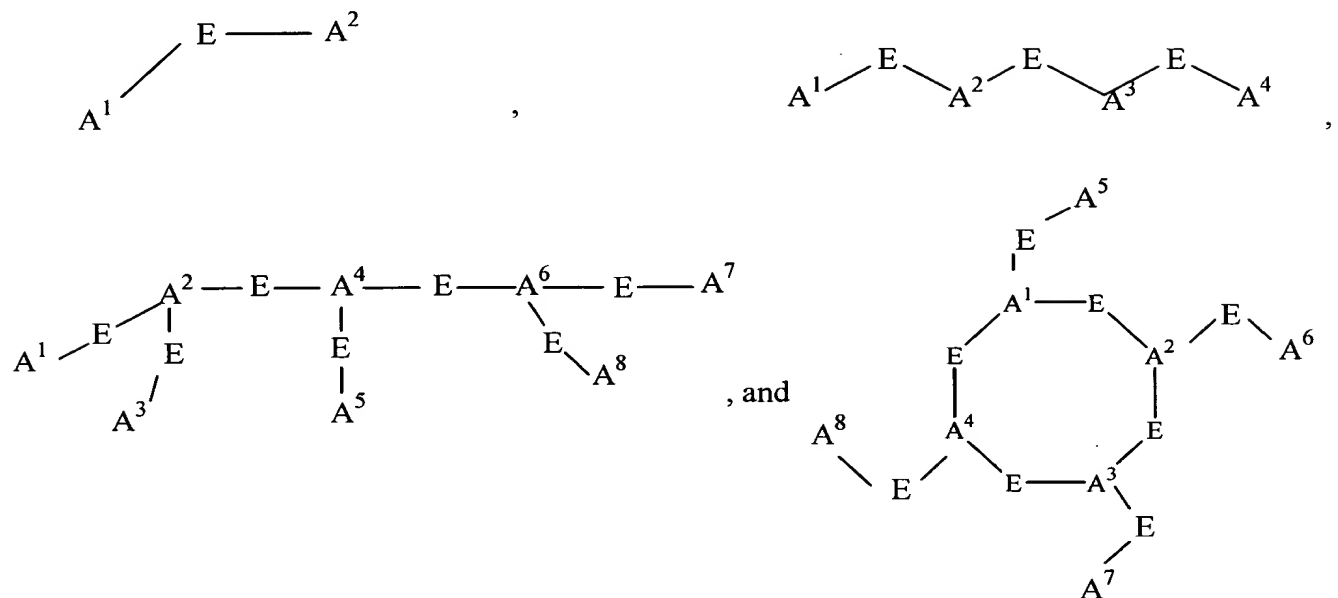
h is selected from 0, 1, and 2;

h' is selected from 0, 1, 2, 3, 4, and 5;

h'' is selected from 0, 1, 2, 3, 4, and 5;

g is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;  
 g' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;  
 g'' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;  
 g''' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;  
 s is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;  
 s' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;  
 s'' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;  
 t is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;  
 t' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

C<sub>h</sub> is a metal bonding unit having a formula selected from the group:



A<sup>1</sup>, A<sup>2</sup>, A<sup>3</sup>, A<sup>4</sup>, A<sup>5</sup>, A<sup>6</sup>, A<sup>7</sup>, and A<sup>8</sup> are independently selected at each occurrence from the group N, NR<sup>13</sup>, NR<sup>13</sup>R<sup>14</sup>, S, SH, S(Pg), O, OH, PR<sup>13</sup>, PR<sup>13</sup>R<sup>14</sup>, P(O)R<sup>15</sup>R<sup>16</sup>, and a bond to L<sub>n</sub>;

E is a bond, CH, or a spacer group independently selected at each occurrence from the group:

C<sub>1</sub>-C<sub>10</sub> alkyl substituted with 0-3 R<sup>17</sup>, aryl substituted with 0-3 R<sup>17</sup>, C<sub>3-10</sub> cycloalkyl

substituted with 0-3 R<sup>17</sup>, heterocyclo C<sub>1-10</sub> alkyl substituted with 0-3 R<sup>17</sup>, wherein the heterocyclo group is a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O, C<sub>6-10</sub> aryl C<sub>1-10</sub> alkyl substituted with 0-3 R<sup>17</sup>, C<sub>1-10</sub> alkyl C<sub>6-10</sub> aryl substituted with 0-3 R<sup>17</sup>, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R<sup>17</sup>;

R<sup>13</sup>, and R<sup>14</sup> are each independently selected from the group: a bond to L<sub>n</sub>, hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl substituted with 0-3 R<sup>17</sup>, aryl substituted with 0-3 R<sup>17</sup>, C<sub>1-10</sub> cycloalkyl substituted with 0-3 R<sup>17</sup>, heterocyclo C<sub>1-10</sub> alkyl substituted with 0-3 R<sup>17</sup>, wherein the heterocyclo group is a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O, C<sub>6-10</sub> aryl C<sub>1-10</sub> alkyl substituted with 0-3 R<sup>17</sup>, C<sub>1-10</sub> alkyl C<sub>6-10</sub> aryl substituted with 0-3 R<sup>17</sup>, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R<sup>17</sup>, and an electron, provided that when one of R<sup>13</sup> or R<sup>14</sup> is an electron, then the other is also an electron;

alternatively, R<sup>13</sup> and R<sup>14</sup> combine to form =C(R<sup>20</sup>)(R<sup>21</sup>);

R<sup>15</sup> and R<sup>16</sup> are each independently selected from the group: a bond to L<sub>n</sub>, OH, C<sub>1</sub>-C<sub>10</sub> alkyl substituted with 0-3 R<sup>17</sup>, C<sub>1</sub>-C<sub>10</sub> alkyl substituted with 0-3 R<sup>17</sup>, aryl substituted with 0-3 R<sup>17</sup>, C<sub>3-10</sub> cycloalkyl substituted with 0-3 R<sup>17</sup>, heterocyclo C<sub>1-10</sub> alkyl substituted with 0-3 R<sup>17</sup>, wherein the heterocyclo group is a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O, C<sub>6-10</sub> aryl C<sub>1-10</sub> alkyl substituted with 0-3 R<sup>17</sup>, C<sub>1-10</sub> alkyl C<sub>6-10</sub> aryl substituted with 0-3 R<sup>17</sup>, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R<sup>17</sup>;

R<sup>17</sup> is independently selected at each occurrence from the group: a bond to L<sub>n</sub>, =O, F, Cl, Br, I, -CF<sub>3</sub>, -CN, -CO<sub>2</sub>R<sup>18</sup>, -C(=O)R<sup>18</sup>, -C(=O)N(R<sup>18</sup>)<sub>2</sub>, -CHO, -CH<sub>2</sub>OR<sup>18</sup>, -OC(=O)R<sup>18</sup>, -OC(=O)OR<sup>18a</sup>, -OR<sup>18</sup>, -OC(=O)N(R<sup>18</sup>)<sub>2</sub>, -NR<sup>19C</sup>(=O)R<sup>18</sup>, -NR<sup>19C</sup>(=O)OR<sup>18a</sup>,



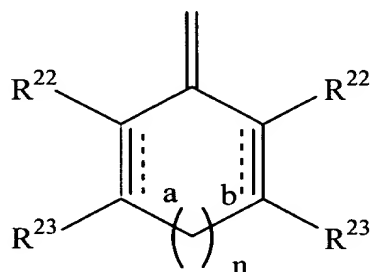
$-\text{NR}^{19}\text{C}(=\text{O})\text{N}(\text{R}^{18})_2$ ,  $-\text{NR}^{19}\text{SO}_2\text{N}(\text{R}^{18})_2$ ,  $-\text{NR}^{19}\text{SO}_2\text{R}^{18a}$ ,  $-\text{SO}_3\text{H}$ ,  $-\text{SO}_2\text{R}^{18a}$ ,  $-\text{SR}^{18}$ ,  
 $-\text{S}(=\text{O})\text{R}^{18a}$ ,  $-\text{SO}_2\text{N}(\text{R}^{18})_2$ ,  $-\text{N}(\text{R}^{18})_2$ ,  $-\text{NHC}(=\text{S})\text{NHR}^{18}$ ,  $=\text{NOR}^{18}$ ,  $\text{NO}_2$ ,  $-\text{C}(=\text{O})\text{NHOR}^{18}$ ,  $-\text{C}(=\text{O})\text{NHN}(\text{R}^{18})\text{R}^{18a}$ ,  $-\text{OCH}_2\text{CO}_2\text{H}$ , 2-(1 morpholino)ethoxy,  $\text{C}_1\text{-C}_5$  alkyl,  $\text{C}_2\text{-C}_4$  alkenyl,  $\text{C}_3\text{-C}_6$  cycloalkyl,  $\text{C}_3\text{-C}_6$  cycloalkylmethyl,  $\text{C}_2\text{-C}_6$  alkoxyalkyl, aryl substituted with 0-2  $\text{R}^{18}$ , and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O;

$\text{R}^{18}$ ,  $\text{R}^{18a}$ , and  $\text{R}^{19}$  are independently selected at each occurrence from the group: a bond to  $\text{L}_n$ , H,  $\text{C}_1\text{-C}_6$  alkyl, phenyl, benzyl,  $\text{C}_1\text{-C}_6$  alkoxy, halide, nitro, cyano, and trifluoromethyl;

$\text{Pg}$  is a thiol protecting group;

$\text{R}^{20}$  and  $\text{R}^{21}$  are independently selected from the group: H,  $\text{C}_1\text{-C}_{10}$  alkyl,  $-\text{CN}$ ,  $-\text{CO}_2\text{R}^{25}$ ,  $-\text{C}(=\text{O})\text{R}^{25}$ ,  $-\text{C}(=\text{O})\text{N}(\text{R}^{25})_2$ ,  $\text{C}_2\text{-C}_{10}$  1-alkene substituted with 0-3  $\text{R}^{23}$ ,  $\text{C}_2\text{-C}_{10}$  1-alkyne substituted with 0-3  $\text{R}^{23}$ , aryl substituted with 0-3  $\text{R}^{23}$ , unsaturated 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3  $\text{R}^{23}$ , and unsaturated  $\text{C}_{3-10}$  carbocycle substituted with 0-3  $\text{R}^{23}$ ;

alternatively,  $\text{R}^{20}$  and  $\text{R}^{21}$ , taken together with the divalent carbon radical to which they are attached form:



$R^{22}$  and  $R^{23}$  are independently selected from the group: H,  $R^{24}$ ,  $C_1$ - $C_{10}$  alkyl substituted with 0-3  $R^{24}$ ,  $C_2$ - $C_{10}$  alkenyl substituted with 0-3  $R^{24}$ ,  $C_2$ - $C_{10}$  alkynyl substituted with 0-3  $R^{24}$ , aryl substituted with 0-3  $R^{24}$ , a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3  $R^{24}$ , and  $C_{3-10}$  carbocycle substituted with 0-3  $R^{24}$ ;

alternatively,  $R^{22}$ ,  $R^{23}$  taken together form a fused aromatic or a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O;

**a** and **b** indicate the positions of optional double bonds and **n** is 0 or 1;

$R^{24}$  is independently selected at each occurrence from the group: =O, F, Cl, Br, I,  $-CF_3$ ,  $-CN$ ,  $-CO_2R^{25}$ ,  $-C(=O)R^{25}$ ,  $-C(=O)N(R^{25})_2$ ,  $-N(R^{25})_3^+$ ,  $-CH_2OR^{25}$ ,  $-OC(=O)R^{25}$ ,  $-OC(=O)OR^{25a}$ ,  $-OR^{25}$ ,  $-OC(=O)N(R^{25})_2$ ,  $-NR^{26}C(=O)R^{25}$ ,  $-NR^{26}C(=O)OR^{25a}$ ,  $-NR^{26}C(=O)N(R^{25})_2$ ,  $-NR^{26}SO_2N(R^{25})_2$ ,  $-NR^{26}SO_2R^{25a}$ ,  $-SO_3H$ ,  $-SO_2R^{25a}$ ,  $-SR^{25}$ ,  $-S(=O)R^{25a}$ ,  $-SO_2N(R^{25})_2$ ,  $-N(R^{25})_2$ ,  $=NOR^{25}$ ,  $-C(=O)NHOR^{25}$ ,  $-OCH_2CO_2H$ , and 2-(1-morpholino)ethoxy; and,

$R^{25}$ ,  $R^{25a}$ , and  $R^{26}$  are each independently selected at each occurrence from the group: hydrogen and  $C_1$ - $C_6$  alkyl;

and a pharmaceutically acceptable salt thereof.

4. (Previously Presented): A compound according to Claim 3, wherein:

L is glycine;

$R^1$  is an amino acid, optionally substituted with a bond to  $L_n$ , independently selected at each occurrence from the group: L-valine, D-valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, tyrosine, phenylalanine, phenylglycine,

cyclohexylalanine, homophenylalanine, lysine, ornithine, 1,2-diaminobutyric acid, and 1,2-diaminopropionic acid;

$R^2$  is an amino acid, optionally substituted with a bond to  $L_n$ , independently selected at each occurrence from the group: valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, tyrosine, L-phenylalanine, D-phenylalanine, thienylalanine, phenylglycine, biphenylglycine, cyclohexylalanine, homophenylalanine, L-1-naphthylalanine, D-1-naphthylalanine, lysine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, and 2-aminothiazole-4-acetic acid;

$R^3$  is an amino acid, optionally substituted with a bond to  $L_n$ , independently selected at each occurrence from the group: D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-tyrosine, D-phenylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, and D-1,2-diaminopropionic acid;

$R^4$  is an amino acid, optionally substituted with a bond to  $L_n$ , independently selected at each occurrence from the group: D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, and 2-aminothiazole-4-acetic acid;

$R^5$  is an amino acid, optionally substituted with a bond to  $L_n$ , independently selected at each occurrence from the group: L-valine, L-alanine, L-leucine, L-isoleucine, L-norleucine, L-2-aminobutyric acid, L-tyrosine, L-phenylalanine, L-thienylalanine, L-phenylglycine, L-cyclohexylalanine, L-homophenylalanine, L-1-naphthylalanine, L-lysine, L-ornithine, L-1,2-diaminobutyric acid, L-1,2-diaminopropionic acid, and 2-aminothiazole-4-acetic acid;

d is selected from 1, 2, and 3;

W is independently selected at each occurrence from the group: O, NH, NHC(=O), C(=O)NH, C(=O), C(=O)O, OC(=O), NHC(=S)NH, NHC(=O)NH, SO<sub>2</sub>, (OCH<sub>2</sub>CH<sub>2</sub>)<sub>s</sub>, (CH<sub>2</sub>CH<sub>2</sub>O)<sub>s</sub>, (OCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>)<sub>s'</sub>, and (CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>O)<sub>t</sub>,

Z is selected from the group: aryl substituted with 0-1 R<sup>10</sup>, C<sub>3-10</sub> cycloalkyl substituted with 0-1 R<sup>10</sup>, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1 R<sup>10</sup>;

R<sup>6</sup>, R<sup>6a</sup>, R<sup>7</sup>, R<sup>7a</sup>, R<sup>8</sup>, R<sup>8a</sup>, R<sup>9</sup>, and R<sup>9a</sup> are independently selected at each occurrence from the group: H, =O, COOH, SO<sub>3</sub>H, C<sub>1</sub>-C<sub>5</sub> alkyl substituted with 0-1 R<sup>10</sup>, aryl substituted with 0-1 R<sup>10</sup>, benzyl substituted with 0-1 R<sup>10</sup>, and C<sub>1</sub>-C<sub>5</sub> alkoxy substituted with 0-1 R<sup>10</sup>, NHC(=O)R<sup>11</sup>, C(=O)NHR<sup>11</sup>, NHC(=O)NHR<sup>11</sup>, NHR<sup>11</sup>, R<sup>11</sup>, and a bond to C<sub>h</sub>;

R<sup>10</sup> is independently selected at each occurrence from the group: COOR<sup>11</sup>, OH, NHR<sup>11</sup>, SO<sub>3</sub>H, aryl substituted with 0-1 R<sup>11</sup>, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1 R<sup>11</sup>, C<sub>1</sub>-C<sub>5</sub> alkyl substituted with 0-1 R<sup>12</sup>, C<sub>1</sub>-C<sub>5</sub> alkoxy substituted with 0-1 R<sup>12</sup>, and a bond to C<sub>h</sub>;

R<sup>11</sup> is independently selected at each occurrence from the group: H, aryl substituted with 0-1 R<sup>12</sup>, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1 R<sup>12</sup>, polyalkylene glycol substituted with 0-1 R<sup>12</sup>, carbohydrate substituted with 0-1 R<sup>12</sup>, cyclodextrin substituted with 0-1 R<sup>12</sup>, amino acid substituted with 0-1 R<sup>12</sup>, and a bond to C<sub>h</sub>;

k is 0 or 1;

h is 0 or 1;

h' is 0 or 1;

s is selected from 0, 1, 2, 3, 4, and 5;

s' is selected from 0, 1, 2, 3, 4, and 5;

s" is selected from 0, 1, 2, 3, 4, and 5;

t is selected from 0, 1, 2, 3, 4, and 5;

A<sup>1</sup>, A<sup>2</sup>, A<sup>3</sup>, A<sup>4</sup>, A<sup>5</sup>, A<sup>6</sup>, A<sup>7</sup>, and A<sup>8</sup> are independently selected at each occurrence from the group: NR<sup>13</sup>, NR<sup>13</sup>R<sup>14</sup>, S, SH, S(Pg), OH, and a bond to L<sub>n</sub>;

E is a bond, CH, or a spacer group independently selected at each occurrence from the group:

C<sub>1</sub>-C<sub>10</sub> alkyl substituted with 0-3 R<sup>17</sup>, aryl substituted with 0-3 R<sup>17</sup>, C<sub>3-10</sub> cycloalkyl substituted with 0-3 R<sup>17</sup>, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R<sup>17</sup>;

R<sup>13</sup>, and R<sup>14</sup> are each independently selected from the group: a bond to L<sub>n</sub>, hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl substituted with 0-3 R<sup>17</sup>, aryl substituted with 0-3 R<sup>17</sup>, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R<sup>17</sup>, and an electron, provided that when one of R<sup>13</sup> or R<sup>14</sup> is an electron, then the other is also an electron;

alternatively, R<sup>13</sup> and R<sup>14</sup> combine to form =C(R<sup>20</sup>)(R<sup>21</sup>);

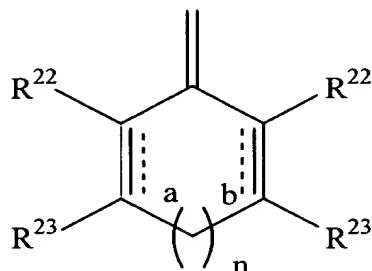
R<sup>17</sup> is independently selected at each occurrence from the group: a bond to L<sub>n</sub>, =O, F, Cl, Br, I, -CF<sub>3</sub>, -CN, -CO<sub>2</sub>R<sup>18</sup>, -C(=O)R<sup>18</sup>, -C(=O)N(R<sup>18</sup>)<sub>2</sub>, -CH<sub>2</sub>OR<sup>18</sup>, -OC(=O)R<sup>18</sup>, -OC(=O)OR<sup>18a</sup>, -OR<sup>18</sup>, -OC(=O)N(R<sup>18</sup>)<sub>2</sub>, -NR<sup>19</sup>C(=O)R<sup>18</sup>, -NR<sup>19</sup>C(=O)OR<sup>18a</sup>, -NR<sup>19</sup>C(=O)N(R<sup>18</sup>)<sub>2</sub>, -NR<sup>19</sup>SO<sub>2</sub>N(R<sup>18</sup>)<sub>2</sub>, -NR<sup>19</sup>SO<sub>2</sub>R<sup>18a</sup>, -SO<sub>3</sub>H, -SO<sub>2</sub>R<sup>18a</sup>, -S(=O)R<sup>18a</sup>, -SO<sub>2</sub>N(R<sup>18</sup>)<sub>2</sub>, -N(R<sup>18</sup>)<sub>2</sub>, -NHC(=S)NHR<sup>18</sup>, =NOR<sup>18</sup>, -C(=O)NHN(R<sup>18</sup>)R<sup>18a</sup>, -OCH<sub>2</sub>CO<sub>2</sub>H, and 2-(1-morpholino)ethoxy;

R<sub>18</sub>, R<sub>18a</sub>, and R<sub>19</sub> are independently selected at each occurrence from the group: a bond to L<sub>n</sub>, H, and C<sub>1</sub>-C<sub>6</sub> alkyl;

R<sup>20</sup> and R<sup>21</sup> are independently selected from the group: H, C<sub>1</sub>-C<sub>5</sub> alkyl, -CO<sub>2</sub>R<sup>25</sup>, C<sub>2</sub>-C<sub>5</sub> 1-alkene substituted with 0-3 R<sup>23</sup>, C<sub>2</sub>-C<sub>5</sub> 1-alkyne substituted with 0-3 R<sup>23</sup>, aryl

substituted with 0-3  $R^{23}$ , and unsaturated 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3  $R^{23}$ ;

alternatively,  $R^{20}$  and  $R^{21}$ , taken together with the divalent carbon radical to which they are attached form:



$R^{22}$  and  $R^{23}$  are independently selected from the group: H, and  $R^{24}$ ;

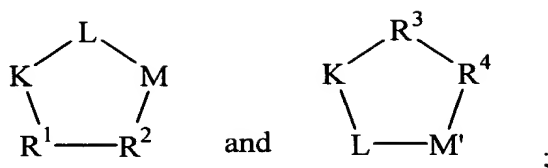
alternatively,  $R^{22}$ ,  $R^{23}$  taken together form a fused aromatic or a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O;

$R^{24}$  is independently selected at each occurrence from the group:  $-\text{CO}_2R^{25}$ ,  $-\text{C}(=\text{O})\text{N}(R^{25})_2$ ,  $-\text{CH}_2\text{OR}^{25}$ ,  $-\text{OC}(=\text{O})R^{25}$ ,  $-\text{OR}^{25}$ ,  $-\text{SO}_3\text{H}$ ,  $-\text{N}(R^{25})_2$ , and  $-\text{OCH}_2\text{CO}_2\text{H}$ ; and,

$R^{25}$  is independently selected at each occurrence from the group: H and  $\text{C}_1\text{-C}_3$  alkyl.

5. (Previously Presented): A compound according to Claim 4, wherein:

Q is a peptide selected from the group:



R<sup>1</sup> is L-valine, D-valine, D-lysine optionally substituted on the  $\epsilon$  amino group with a bond to L<sub>n</sub> or L-lysine optionally substituted on the  $\epsilon$  amino group with a bond to L<sub>n</sub>;

R<sup>2</sup> is L-phenylalanine, D-phenylalanine, D-1-naphthylalanine, 2-aminothiazole-4-acetic acid, L-lysine optionally substituted on the  $\epsilon$  amino group with a bond to L<sub>n</sub> or tyrosine, the tyrosine optionally substituted on the hydroxy group with a bond to L<sub>n</sub>;

R<sup>3</sup> is D-valine, D-phenylalanine, or L-lysine optionally substituted on the  $\epsilon$  amino group with a bond to L<sub>n</sub>;

R<sup>4</sup> is D-phenylalanine, D-tyrosine substituted on the hydroxy group with a bond to L<sub>n</sub>, or L-lysine optionally substituted on the  $\epsilon$  amino group with a bond to L<sub>n</sub>;

provided that one of R<sup>1</sup> and R<sup>2</sup> in each Q is substituted with a bond to L<sub>n</sub>, and further provided that when R<sup>2</sup> is 2-aminothiazole-4-acetic acid, K is N methylarginine;

d is 1 or 2;

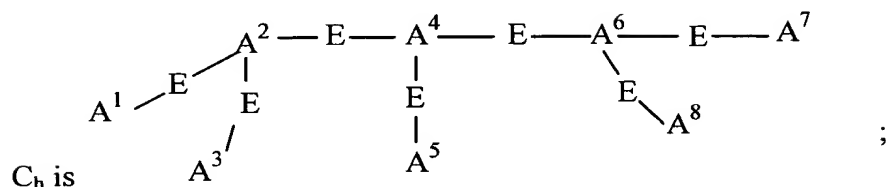
W is independently selected at each occurrence from the group: NHC(=O), C(=O)NH, C(=O), (CH<sub>2</sub>CH<sub>2</sub>O)<sub>s</sub>, and (CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>O)<sub>t</sub>;

R<sup>6</sup>, R<sup>6a</sup>, R<sup>7</sup>, R<sup>7a</sup>, R<sup>8</sup>, R<sup>8a</sup>, R<sup>9</sup>, and R<sup>9a</sup> are independently selected at each occurrence from the group: H, NHC(=O)R<sup>11</sup>, and a bond to C<sub>h</sub>;

k is 0;

h" is selected from 0, 1, 2, and 3;

g is selected from 0, 1, 2, 3, 4, and 5;  
 g' is selected from 0, 1, 2, 3, 4, and 5;  
 g'' is selected from 0, 1, 2, 3, 4, and 5;  
 g''' is selected from 0, 1, 2, 3, 4, and 5;  
 s' is 1 or 2;  
 t is 1 or 2;



$A^1$  is selected from the group: OH, and a bond to  $L_n$ ;

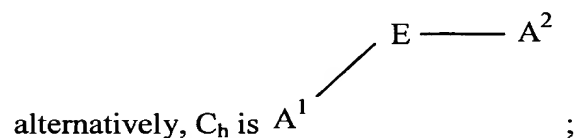
$A^2$ ,  $A^4$ , and  $A^6$  are each N;

$A^3$ ,  $A^5$ , and  $A^8$  are each OH;

$A^7$  is a bond to  $L_n$  or NH-bond to  $L_n$ ;

E is a  $C_2$  alkyl substituted with 0-1  $R^{17}$ ;

$R^{17}$  is =O;



$A^1$  is  $NH_2$  or  $N=C(R^{20})(R^{21})$ ;

E is a bond;



$A^2$  is  $NHR^{13}$ ;

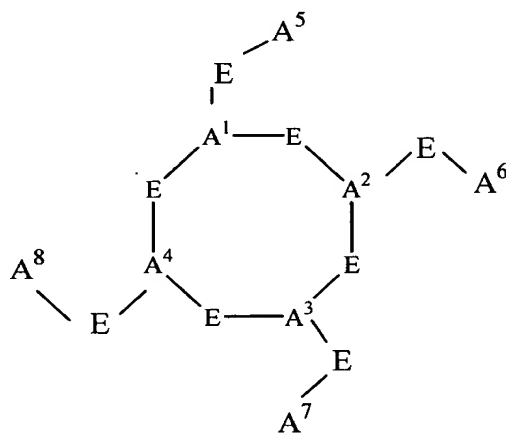
$R^{13}$  is a heterocycle substituted with  $R^{17}$ , the heterocycle being selected from pyridine and pyrimidine;

$R^{17}$  is selected from a bond to  $L_n$ ,  $C(=O)NHR^{18}$ , and  $C(=O)R^{18}$ ;

$R^{18}$  is a bond to  $L_n$ ;

$R^{24}$  is selected from the group:  $CO_2R^{25}$ ,  $OR^{25}$ ,  $SO_3H$ , and  $N(R^{25})_2$ ;

$R^{25}$  is independently selected at each occurrence from the group: hydrogen and methyl;



alternatively,  $C_h$  is

$A^1$ ,  $A^2$ ,  $A^3$ , and  $A^4$  are each N;

$A^5$ ,  $A^6$ , and  $A^8$  are each OH;

$A^7$  is a bond to  $L_n$ ;

E is a  $C_2$  alkyl substituted with 0-1  $R^{17}$ ; and,

R<sup>17</sup> is =O.

6. (Previously Presented): A compound according to Claim 3, selected from the group:

- (a) cyclo{Arg-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (b) cyclo{Arg-Gly-Asp-D-Tyr((N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-18-amino-14-aza-4,7,10-oxy-15-oxo-octadecoyl)-3-aminopropyl)-Val};
- (c) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo{D-Tyr(3-aminopropyl)-Val-Arg-Gly-Asp})-cyclo{D-Tyr(3-aminopropyl)-Val-Arg-Gly-Asp};
- (d) cyclo(Arg-Gly-Asp-D-Tyr-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]));
- (e) cyclo{Arg-Gly-Asp-D-Phe-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]));
- (f) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe};
- (g) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Phe-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe};
- (h) cyclo{Arg-Gly-Asp-D-Nal-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]));

- (i) [2-[[[5-[carbonyl]-2-pyridinyl]-hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo{Lys-Arg-Gly-Asp-D-Nal})-cyclo{Lys-Arg-Gly-Asp-D-Nal};
- (j) cyclo{Arg-Gly-Asp-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])-D-Val} ;
- (k) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo{Lys-D-Val-Arg-Gly-Asp})-cyclo{Lys-D-Val-Arg-Gly-Asp};
- (l) {cyclo(Arg-D-Val-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-D-Asp-Gly};
- (m) cyclo{D-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])-D-Phe-D-Asp-Gly-Arg};
- (n) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo{D-Lys-D-Phe-D-Asp-Gly-Arg})-cyclo{D-Lys-D-Phe-D-Asp-Gly-Arg};
- (o) cyclo{D-Phe-D-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])-D-Asp-Gly-Arg};
- (p) cyclo{N-Me-Arg-Gly-Asp-ATA-D-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])};
- (q) cyclo{Cit-Gly-Asp-D-Phe-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])};
- (r) 2-(1,4,7,10-tetraaza-4,7,10-tris(carboxymethyl)-1-cyclododecyl)acetyl-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe};
- (s) cyclo{Arg-Gly-Asp-D-Phe-Lys(DTPA)};

- (t) cyclo{Arg-Gly-Asp-D-Phe-Lys}2(DTPA);
- (u) Cyclo{Arg-Gly-Asp-D-Tyr(N-DTPA-3-aminopropyl)-Val};
- (v) cyclo{Orn(d-N-2-ImidazolinyI)-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyI]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (w) cyclo{Lys-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyI]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (x) cyclo{Cys(2-aminoethyl)-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyI]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (y) cyclo{HomoLys-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyI]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (z) cyclo{Orn(d-N-Benzylcarbamoyl)-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyI]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (aa) cyclo{Dap(b-(2-benzimidazolylacetyl))-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyI]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (bb) cyclo{Orn(d-N-2-ImidazolinyI)-Gly-Asp-D-Phe-Lys(N-[2-[[[5-[carbonyl]-2-pyridinyI]hydrazono]methyl]-benzenesulfonic acid]]);
- (cc) cyclo{Orn(d-N-Benzylcarbamoyl)-Gly-Asp-D-Phe-Lys(N-[2-[[[5-[carbonyl]-2-pyridinyI]hydrazono]methyl]-benzenesulfonic acid]]);
- (dd) cyclo{Lys-D-Val-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyI]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-D-Asp-Gly};

(ee) cyclo{Orn(d-N-Benzylcarbamoyl)-D-Val-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-D-Asp-Gly}}; and,

(ff) cyclo{Orn(d-N-2-ImidazolinyI)-D-Val-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-D-Asp-Gly}};

or a pharmaceutically acceptable salt form thereof.

7. (Original): A kit comprising a compound of Claim 3, or a pharmaceutically acceptable salt form thereof and a pharmaceutically acceptable carrier.
8. (Original): A kit according to Claim 7, wherein the kit further comprises one or more ancillary ligands and a reducing agent.
9. (Original): A kit according to Claim 8, wherein the ancillary ligands are tricine and TPPTS.
10. (Original): A kit according to Claim 9, wherein the reducing agent is tin(II).
11. (Canceled)
12. (Previously Presented): A metallopharmaceutical comprising the compound of Claim 1, and a radioisotope selected from the group:  $^{99m}\text{Tc}$ ,  $^{95}\text{Tc}$ ,  $^{111}\text{In}$ ,  $^{62}\text{Cu}$ ,  $^{64}\text{Cu}$ ,  $^{67}\text{Ga}$ , and  $^{68}\text{Ga}$ , wherein the targeting moiety is a peptide or a mimetic thereof and the linking group is present between the targeting moiety and chelator.
13. (Previously Presented): A metallopharmaceutical according to Claim 12, wherein the targeting moiety is a cyclic pentapeptide.

14. (Previously Presented): A metallopharmaceutical according to Claim 13, wherein the radioisotope is  $^{99m}\text{Tc}$  or  $^{95}\text{Tc}$ , and the metallopharmaceutical further comprises a first ancillary ligand and a second ancillary ligand capable of stabilizing the metallopharmaceutical.

15. (Previously Presented): A metallopharmaceutical according to Claim 14, wherein the radioisotope is  $^{99m}\text{Tc}$ .

16. (Previously Presented): A metallopharmaceutical according to Claim 15, wherein the metallopharmaceutical is selected from the group:

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-Gly-Asp-D-Tyr}(\text{N}-[[5\text{-[carbonyl]-2-pyridinyl}] \text{ diazenido}]-3\text{-aminopropyl})\text{-Val}))$ ;

$^{99m}\text{Tc}(\text{tricine})(\text{TPPMS})(\text{cyclo}(\text{Arg-D-Val-D-Tyr}(\text{N}-[[5\text{-[carbonyl]-2-pyridinyl}] \text{ diazenido}]-3\text{-aminopropyl})\text{-D-Asp-Gly}))$ ;

$^{99m}\text{Tc}(\text{tricine})(\text{TPPDS})(\text{cyclo}(\text{Arg-D-Val-D-Tyr}(\text{N}-[[5\text{-[carbonyl]-2-pyridinyl}] \text{ diazenido}]-3\text{-aminopropyl})\text{-D-Asp-Gly}))$ ;

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-D-Val-D-Tyr}(\text{N}-[[5\text{-[carbonyl]-2-pyridinyl}] \text{ diazenido}]-3\text{-aminopropyl})\text{-D-Asp-Gly}))$ ;

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-Gly-Asp-D-Phe-Lys}(\text{N}-[[5\text{-[carbonyl]-2-pyridinyl}] \text{ diazenido}])))$ ;

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-Gly-Asp-D-Tyr-Lys}(\text{N}-[[5\text{-[carbonyl]-2-pyridinyl}] \text{ diazenido}])))$ ;

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})([2-[[[5\text{-[carbonyl]-2-pyridinyl}] \text{ hydrazono}] \text{ methyl}]\text{-benzenesulfonic acid}]\text{-Phe-Glu}(\text{cyclo}\{\text{Lys-Arg-Gly-Asp-D-Phe}\})\text{-cyclo}\{\text{Lys-Arg-Gly-Asp-D-Phe}\}))$ ;

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}\{\text{Arg-Gly-Asp-D-Nal-Lys}([2-[[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{hydrazono}]\text{methyl}]\text{-benzenesulfonic acid}]]\}));$

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})([2-[[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{-hydrazono}]\text{methyl}]\text{-benzenesulfonic acid}]\text{-Glu}(\text{cyclo}\{\text{Lys-Arg-Gly-Asp-D-Nal}\})\text{-cyclo}\{\text{Lys-Arg-Gly-Asp-D-Nal}\}));$

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-Gly-Asp-D-Tyr}(\text{N}-[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{diazenido}]\text{-18-amino-14-aza-4,7,10-oxy-15-oxo-octadecoyl})\text{-3-aminopropyl})\text{-Val}));$

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{N}-[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{diazenido}]\text{-Glu}(\text{O-cyclo}(\text{Lys-Arg-Gly-Asp-D-Phe}))\text{-O-cyclo}(\text{Lys-Arg-Gly-Asp-D-Phe}));$

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{N}-[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{diazenido}]\text{-Glu}(\text{O-cyclo}(\text{D-Tyr}(3\text{-aminopropyl})\text{-Val-Arg-Gly-Asp}))\text{-O-cyclo}(\text{D-Tyr}(3\text{-aminopropyl})\text{-Val-Arg-Gly-Asp}));$

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-Gly-Asp-Lys}(\text{N}-[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{diazenido}]))\text{-D-Val}));$

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}\{\text{D-Lys}([2-[[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{hydrazono}]\text{methyl}]\text{-benzenesulfonic acid}])\text{-D-Phe-D-Asp-Gly-Arg}\}));$

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})([2-[[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{hydrazono}]\text{methyl}]\text{-benzenesulfonic acid}]\text{-Glu}(\text{cyclo}\{\text{D-Lys-D-Phe-D-Asp-Gly-Arg}\})\text{-cyclo}\{\text{D-Lys-D-Phe-D-Asp-Gly-Arg}\}));$

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}\{\text{D-Phe-D-Lys}([2-[[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{hydrazono}]\text{methyl}]\text{-benzenesulfonic acid}])\text{-D-Asp-Gly-Arg}\}));$

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{N-Me-Arg-Gly-Asp-ATA-D-Lys}(\text{N}-[[5\text{-[carbonyl]-2-pyridinyl}] \text{diazenido}])))$ );

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}\{\text{Cit-Gly-Asp-D-Phe-Lys}([2-[[[5\text{-[carbonyl]-2-pyridinyl}] \text{hydrazono}] \text{methyl}] \text{-benzenesulfonic acid}])])\}$ ); and,

$^{99m}\text{Tc}(\text{tricine})(1,2,4\text{-triazole})(\text{cyclo}(\text{Arg-Gly-Asp-D-Tyr}(\text{N}-[[5\text{-[carbonyl]-2-pyridinyl}] \text{diazenido}] \text{-3-aminopropyl}) \text{-Val}))$ .

17. (Previously Presented): A metallopharmaceutical according to Claim 13, wherein the radioisotope is  $^{111}\text{In}$ .

18. (Previously Presented): A metallopharmaceutical according to Claim 17, wherein the metallopharmaceutical is selected from the group:

$(\text{DOTA-}^{111}\text{In})\text{-Glu}(\text{cyclo}\{\text{Lys-Arg-Gly-Asp-D-Phe}\})\text{-cyclo}\{\text{Lys-Arg-Gly-Asp-D-Phe}\}$ ;

$\text{cyclo}(\text{Arg-Gly-Asp-D-Phe-Lys}(\text{DTPA-}^{111}\text{In}))$ ; and

$\text{cyclo}(\text{Arg-Gly-Asp-D-Phe-Lys})_2(\text{DTPA-}^{111}\text{In})$ .

19. (Previously Presented): A metallopharmaceutical comprising the compound of Claim 1 and a radioisotope selected from the group:  $^{186}\text{Re}$ ,  $^{188}\text{Re}$ ,  $^{153}\text{Sm}$ ,  $^{166}\text{Ho}$ ,  $^{177}\text{Lu}$ ,  $^{149}\text{Pm}$ ,  $^{90}\text{Y}$ ,  $^{212}\text{Bi}$ ,  $^{103}\text{Pd}$ ,  $^{109}\text{Pd}$ ,  $^{159}\text{Gd}$ ,  $^{140}\text{La}$ ,  $^{198}\text{Au}$ ,  $^{199}\text{Au}$ ,  $^{169}\text{Yb}$ ,  $^{175}\text{Yb}$ ,  $^{165}\text{Dy}$ ,  $^{166}\text{Dy}$ ,  $^{67}\text{Cu}$ ,  $^{105}\text{Rh}$ ,  $^{111}\text{Ag}$ , and  $^{192}\text{Ir}$ , the targeting moiety is a peptide or a mimetic thereof and the linking group is present between the targeting moiety and chelator.

20. (Previously Presented): A metallopharmaceutical according to Claim 19, wherein the targeting moiety is a cyclic pentapeptide.



21. (Previously Presented): A metallopharmaceutical according to Claim 20, wherein the radioisotope is  $^{153}\text{Sm}$ .

22. (Previously Presented): A metallopharmaceutical according to Claim 21, wherein the metallopharmaceutical is selected from the group:

cyclo(Arg-Gly-Asp-D-Phe-Lys(DTPA- $^{153}\text{Sm}$ ));

cyclo(Arg-Gly-Asp-D-Phe-Lys) $_2$ (DTPA- $^{153}\text{Sm}$ ); and,

cyclo(Arg-Gly-Asp-D-Tyr(N-DTPA( $^{153}\text{Sm}$ )-3-aminopropyl)-Val).

23. (Previously Presented): A metallopharmaceutical according to Claim 20, wherein the radioisotope is  $^{177}\text{Lu}$ .

24. (Previously Presented): A metallopharmaceutical according to Claim 23, wherein the metallopharmaceutical is selected from the group:

cyclo(Arg-Gly-Asp-D-Phe-Lys(DTPA- $^{177}\text{Lu}$ ));

(DOTA- $^{177}\text{Lu}$ )-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe};

cyclo(Arg-Gly-Asp-D-Phe-Lys) $_2$ (DTPA- $^{177}\text{Lu}$ ); and

cyclo(Arg-Gly-Asp-D-Tyr(N-DTPA( $^{177}\text{Lu}$ )-3-aminopropyl)-Val).

25. (Previously Presented): A metallopharmaceutical according to Claim 20, wherein the radioisotope is  $^{90}\text{Y}$ .

26. (Previously Presented): A metallopharmaceutical according to Claim 25, wherein the metallopharmaceutical is:

(DOTA-<sup>90</sup>Y)-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe};

27. (Previously Presented): A metallopharmaceutical comprising the compound of Claim 1 and, a paramagnetic metal ion selected from the group: Gd(III), Dy(III), Fe(III), and Mn(II), wherein the targeting moiety is a peptide or a mimetic and the linking group is present between the targeting moiety and chelator.

28. (Previously Presented): A metallopharmaceutical according to Claim 27, wherein the targeting moiety is a cyclic pentapeptide.

29. (Previously Presented): A metallopharmaceutical according to Claim 28, wherein the metal ion is Gd(III).

30. (Previously Presented): A metallopharmaceutical according to Claim 29, wherein the contrast agent is:

cyclo(Arg-Gly-Asp-D-Tyr(N-DTPA(Gd(III)))-3-aminopropyl)-Val).

31. (Previously Presented): A metallopharmaceutical comprising the compound of Claim 1 and a metal selected from the group: Re, Sm, Ho, Lu, Pm, Y, Bi, Pd, Gd, La, Au, Au, Yb, Dy, Cu, Rh, Ag, and Ir, wherein the targeting moiety is a cyclic pentapeptide, and the linking group is present between the targeting moiety and chelator.

32. (Previously Presented): A method of treating rheumatoid arthritis in a patient comprising: administering a metallopharmaceutical of Claim 19 capable of localizing in Previously Presented angiogenic vasculature to a patient by injection or infusion.

33. (Previously Presented): A method of treating cancer in a patient comprising: administering to a patient in need thereof a metallopharmaceutical of Claim 19 by injection or infusion.

34. (Previously Presented): A method of imaging formation of new blood vessels in a patient comprising: (1) administering a metallopharmaceutical comprising the compound of Claim 1 and a metal to a patient by injection or infusion; (2) imaging the area of the patient wherein the desired formation of Previously Presented blood vessels is located.

35. (Previously Presented): A method of imaging cancer in a patient comprising: (1) administering a metallopharmaceutical of Claim 12 to a patient by injection or infusion; (2) imaging the patient using planar or SPECT gamma scintigraphy, or positron emission tomography.

Claims 36-47 (Canceled)

48. (Previously Presented): A therapeutic radiopharmaceutical composition, comprising:  
(a) a metallopharmaceutical of Claim 19; and,  
(b) a parenterally acceptable carrier.

49. (Previously Presented): A diagnostic radiopharmaceutical composition, comprising:  
(a) a metallopharmaceutical comprising the compound of Claim 1 and a metal; and,  
(b) a parenterally acceptable carrier.

50. (Original): A therapeutic radiopharmaceutical composition, comprising: a radiolabelled targeting moiety, wherein the targeting moiety is a compound Q of Claim 3 and the radiolabel is a therapeutic isotope selected from the group:  $^{35}\text{S}$ ,  $^{32}\text{P}$ ,  $^{125}\text{I}$ ,  $^{131}\text{I}$ , and  $^{211}\text{At}$ .

Claim 51 (Canceled)

Claim 52 (Previously Presented): A compound comprising a peptide or peptidomimetic  $\alpha_v\beta_3$  receptor targeting moiety bound to a chelator.

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**PATENT**

Claim 53 (New): A compound, comprising a peptide or peptidomimetic  $\alpha_v\beta_3$  receptor targeting moiety bound to a chelator, wherein said chelator is a diaminedithiol, monoamine-monoamidedithiol, triamide-monothiol, monoamine-diamide-monothiol, diaminedioxime, hydrazine, or cyclic polyaminocarboxylate, or acyclic polyaminocarboxylate.